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Dayton 6Z914

DAYTON 6Z914 DC Gearmotor Instruction Manual

Model: 6Z914 | Brand: Dayton

1. Introduction

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your Dayton 6Z914 DC Gearmotor. Please read this manual thoroughly before using the product and retain it for future reference. This gearmotor is designed for industrial and scientific applications requiring precise rotational control.

2. Safety Information

WARNING: Failure to follow these safety instructions may result in serious injury, death, or property damage.

- Always disconnect power before installing, servicing, or cleaning the gearmotor.
- Ensure all electrical connections are made by a qualified electrician and comply with local and national electrical codes.
- Do not operate the gearmotor in wet or explosive environments unless specifically rated for such conditions.
- Keep hands, clothing, and tools clear of moving parts during operation.
- Mount the gearmotor securely to prevent movement or vibration during operation.
- Do not exceed the specified voltage or torque ratings.

3. Product Overview

The Dayton 6Z914 is a DC Gearmotor featuring a parallel shaft orientation and a Totally Enclosed Nonventilated (TENV) motor enclosure. It operates at 90V DC and is a Permanent Magnet DC motor type. Key characteristics include a nameplate speed of 37 RPM, a maximum torque of 74 in-lb, and an overhung load capacity of 90 lb. The motor supports CW/CCW rotation and can be mounted at any angle. It has a gear ratio of 49:1, an input horsepower of 1/40 hp, and an output shaft diameter of 1/2 inch. Bearings are ball type on the motor and needle type on the case output shaft.

4. Specifications

Feature	Value

Feature	Value
Brand	Dayton
Model	6Z914
Motor Type	Permanent Magnet DC
Operating Voltage	90V DC
Nameplate Speed	37 RPM
Maximum Torque	74 in-lb
Overhung Load Capacity	90 lb
Rotation	CW/CCW
Mounting Orientation	Any Angle
Gear Ratio	49:1
Input Horsepower	1/40 hp
Output Shaft Diameter	1/2 in
Bearing Type	Ball on Motor, Needle on Case Output Shaft
Motor Enclosure	Totally Enclosed Nonventilated (TENV)
Shaft Orientation	Parallel
Material	Copper
Item Weight	7 Pounds

5. Installation and Setup

Proper installation is crucial for the performance and longevity of your gearmotor. Refer to the technical drawings for mounting dimensions and wiring details.

5.1 Mounting

The gearmotor can be mounted at any angle. Ensure the mounting surface is flat, rigid, and capable of supporting the motor's weight and operational forces. Use appropriate fasteners for the (4) #10-32 tapped holes or (4) #10-32 holes as indicated in the diagrams.

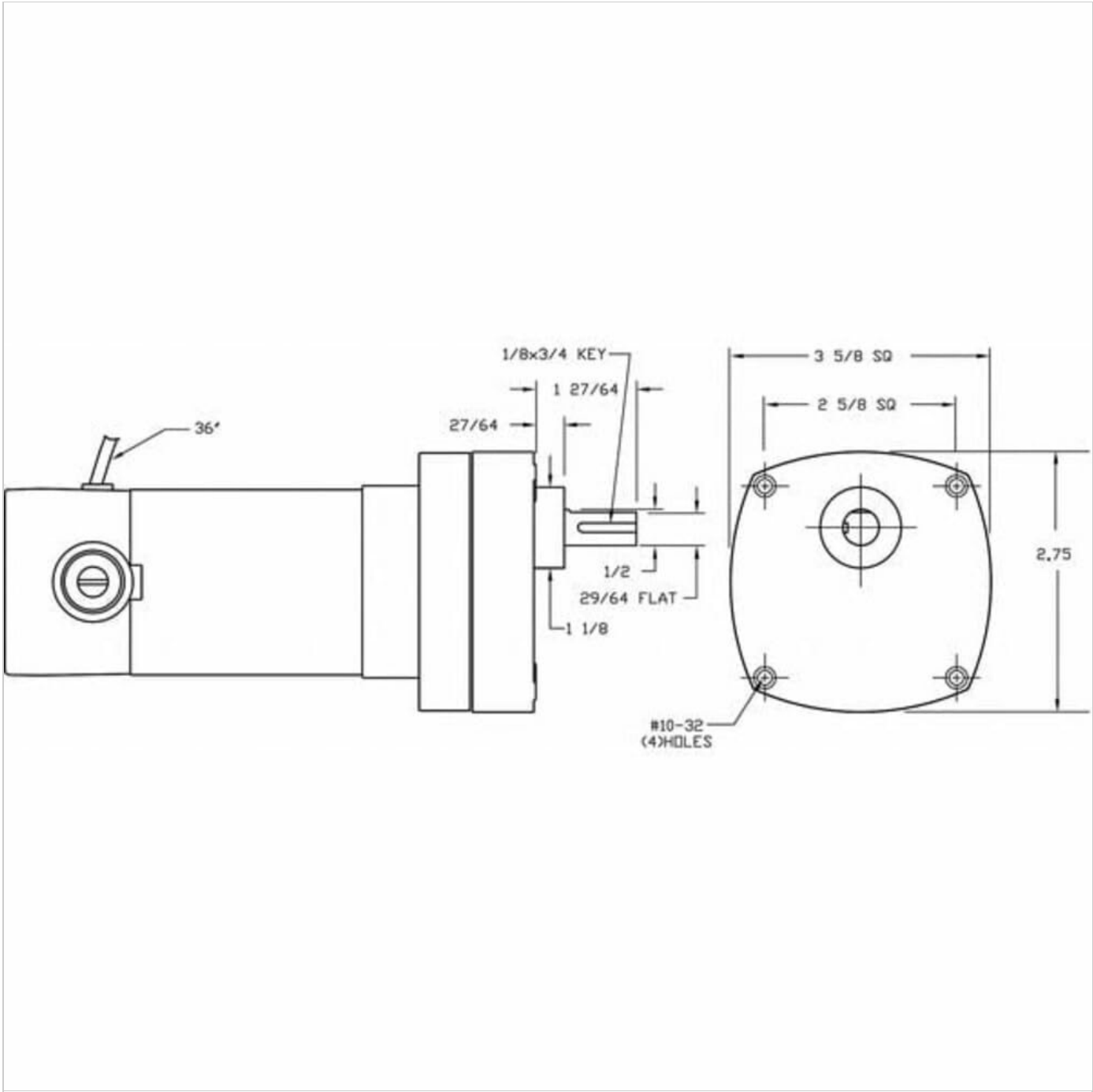


Figure 1: Gearmotor Dimensions (Side and Front View)

This image displays a technical drawing of the Dayton 6Z914 DC Gearmotor. It includes a side view showing the motor body, gearbox, and output shaft with a keyway. Key dimensions are provided for the shaft (1/2 inch diameter, 1/8 x 3/4 key), overall length, and mounting flange. The front view illustrates the square mounting face with four #10-32 holes, detailing the 3 5/8 inch square dimension and the 2 5/8 inch square bolt pattern.

5.2 Electrical Connections

Connect the gearmotor to a 90V DC power supply. The motor is equipped with #18 AWG wires for connection. Ensure correct polarity for desired rotation. Reversing polarity will reverse the direction of rotation. Always ensure the power supply is off before making any connections.

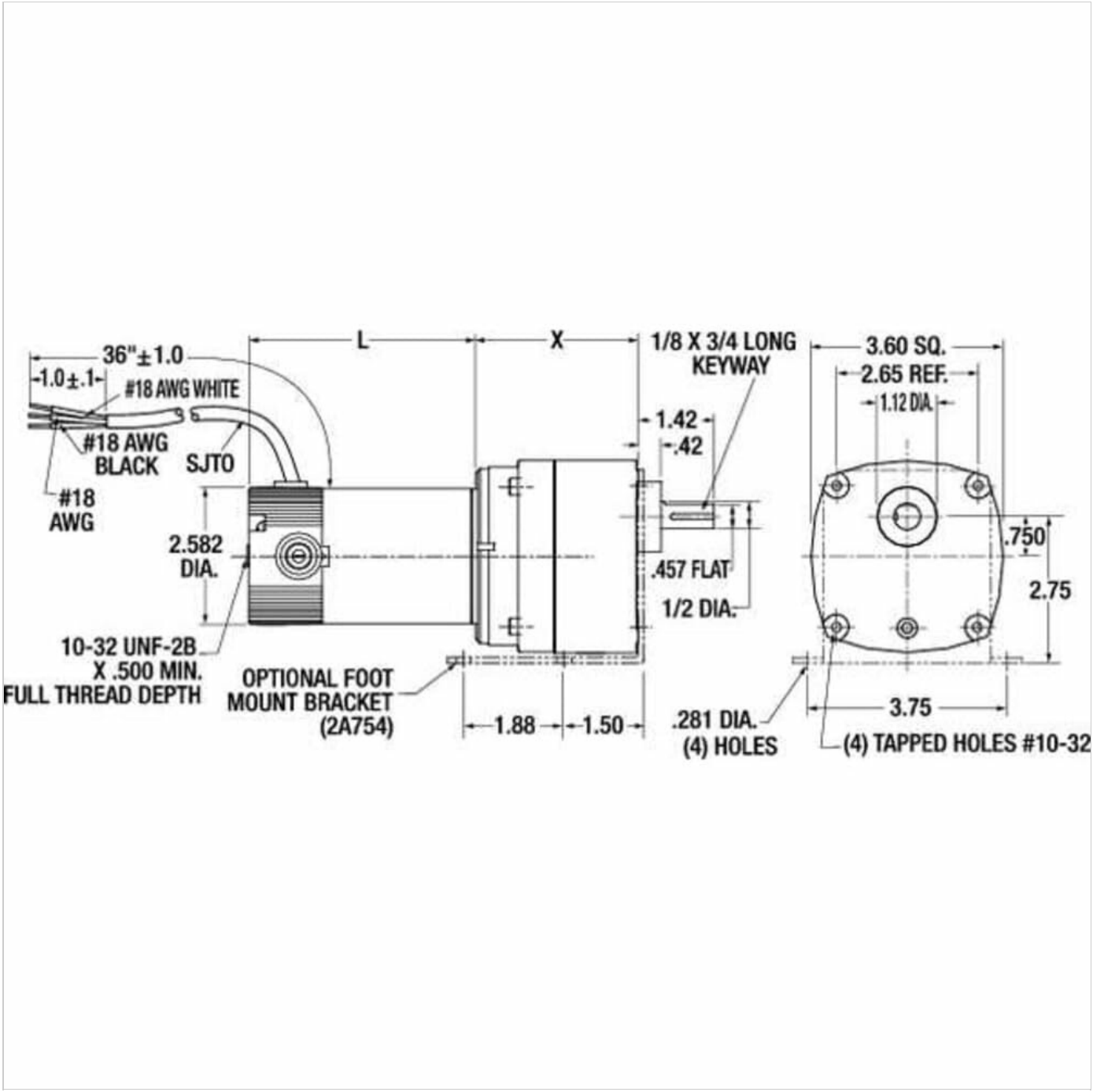


Figure 2: Wiring and Mounting Details

This image presents a technical drawing detailing the electrical connections and mounting options for the Dayton 6Z914 DC Gearmotor. It shows the 36-inch long #18 AWG black and white wires (SJTO type) extending from the motor. Dimensions for the motor body, gearbox, and output shaft are included, along with a detailed view of the 1/8 x 3/4 inch long keyway. The drawing also illustrates an optional foot mount bracket (2A754) and specifies the (4) tapped holes #10-32 for mounting.

6. Operation

Once properly installed and wired, the gearmotor is ready for operation. Apply 90V DC power to the motor. The motor will rotate at its nameplate speed of 37 RPM under normal load conditions. The direction of rotation can be changed by reversing the polarity of the DC power supply. Avoid operating the motor continuously at or above its maximum torque rating to prevent overheating and premature wear.

7. Maintenance

The Dayton 6Z914 DC Gearmotor is designed for minimal maintenance. However, periodic checks can extend its lifespan and ensure optimal performance.

- **Inspection:** Regularly inspect the motor for any signs of damage, loose connections, or excessive wear. Check for unusual noises or vibrations during operation.
- **Cleaning:** Keep the motor exterior clean and free from dust, dirt, and debris. As it is a TENV enclosure, it is designed to prevent ingress of contaminants, but external cleanliness helps with heat dissipation.
- **Lubrication:** The gearhead is factory-lubricated and typically does not require additional lubrication under normal operating conditions. Refer to manufacturer guidelines for specific lubrication schedules if operating in extreme conditions.
- **Shaft Alignment:** Ensure that any connected loads are properly aligned with the output shaft to prevent undue stress on the bearings.

8. Troubleshooting

This section provides solutions to common issues you might encounter.

Problem	Possible Cause	Solution
Motor does not start	No power supply; Incorrect wiring; Overload; Motor fault	Check power connections and supply voltage; Verify wiring against diagrams; Reduce load; Contact support if motor fault is suspected.
Motor runs slowly or with reduced torque	Low voltage; Excessive load; Worn brushes (if applicable); Internal friction	Check power supply voltage; Reduce load; Inspect for mechanical binding; Contact support.
Excessive noise or vibration	Loose mounting; Misalignment; Worn bearings; Internal damage	Tighten mounting bolts; Check and correct shaft alignment; Inspect bearings; Contact support.
Motor overheats	Overload; Insufficient ventilation; High ambient temperature; Electrical fault	Reduce load; Ensure adequate airflow around the motor (though TENV, extreme ambient heat can be an issue); Check for proper voltage; Contact support.

9. Warranty and Support

For warranty information and technical support, please contact Dayton customer service or refer to the official Dayton website. Keep your purchase receipt and product model number (6Z914) handy when contacting support.
Manufacturer: Dayton
Model: 6Z914

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